NWS FORM E-5 (11-88) (PRES. by NWS Instruction 10-924)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL WEATHER SERVICE	HYDROLOGIC SERVICE AREA (HSA) WFO Jackson, Mississippi
MONTHLY REPORT OF HYDROLOGIC CONDITIONS		REPORT FOR: MONTH May YEAR 2010
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283		SIGNATURE Alan E. Gerard, Meteorologist In-Charge DATE 06/15/2010

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

☐ **An X inside this box indicates that no river flooding occurred within this hydrologic service area.**

Synopsis...

The month of May was characterized by continued dry conditions over Northeast Louisiana, Southeast Arkansas, and extreme West Mississippi. Drought intensity increased over much of this area from abnormally dry conditions to moderate to severe drought. The opposite conditions were present over extreme northern and northeast portions of the Hydrologic Service Area (HSA) where normal to above normal rainfall occurred.

The month began with a cold front approaching and slowly progressing across the HSA from the 1st to the 3rd. Intense heavy rainfall from 10.00 to 15.00 inches caused major flooding north of our area over West and Central Tennessee. Northern and northeast portions of our HSA only had 3.00 to 5.00 inches of rainfall while the remainder of the HSA in Mississippi had from 0.50 to 3.00 inches. Northeast Louisiana and Southeast Arkansas which could have used a good soaking rainfall received less than 0.50 inches, with some isolated areas receiving up to 1.50 inches. High pressure built into the region from the 4th through the 6th. Some heavier 24 hour rainfall reports ending at 7am: 4.80 inches at Vaiden, MS (1st); 4.12 inches at Winona 5E (1st); 3.57 inches at Dekalb, MS (3rd); 2.98 inches at Grenada Dam, MS (3rd); 2.75 inches at Grenada, MS (3rd); and 2.60 inches at Eupora, MS (3rd).

A cold front pushed across the area from late on the 7th into the 8th bringing cooler and less humid conditions to the HSA. This front brought from 0.25 to 1.50 inches across portions of West and East Central Mississippi, but only 0.25 inches for Northeast Louisiana. Elsewhere, no rainfall was reported. High pressure built into the area on the 8th and 9th.

From the 10th to 11th, an upper level low moved from the Southwest U.S. to the Upper Midwest allowing a surface warm front to progress across the area. Rainfall was less than 0.50 inches along the Highway 82 corridor. On the 12th, the upper level trough in the Southwest U.S. began to deepen while an upper level ridge strengthened over the southeastern states. A deepening surface low over North Texas tracked to the Upper Midwest by the morning of the 13th dragging a cold front into Northwest Arkansas. Upper level high pressure held firm only allowing the cold front move to a line from

Southwest Arkansas to Northwest Tennessee. The upper level trough in the Southwest U.S. finally began to move eastward by the morning of the 15th. A surface low formed along the cold front in Northeast Texas. Light rain showers began to enter the HSA from the west. From the 15th to the 19th, the surface low traveled to the east northeast dragging a cold front to southern Mississippi. Rainfall over this period was between 0.25 to 1.50 inches over much of the area with heavier rainfall from 1.50 to 3.00 inches over South and Southeast Mississippi.

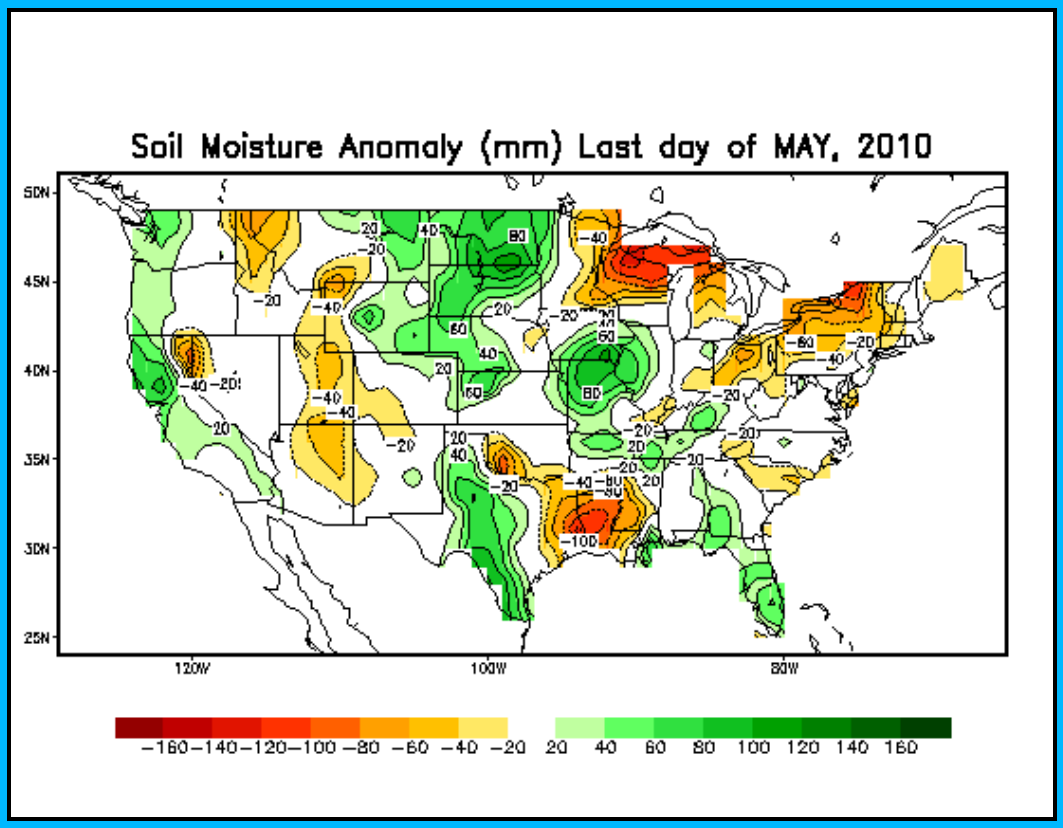
Another upper level trough deepened in the Southwest U.S. on the 19th and began to slowly rotate to the Upper Midwest by the morning of the 21st. At the surface, a low pressure center trekked from North Texas to Central Missouri by the 21st bringing a warm front through the HSA. Some hail was reported in Catahoula Parish with a strong thunderstorm on the afternoon of the 19th. Heavy rainfall occurred over the eastern half of Mississippi on the 20th. An F0 tornado touched down in Jones County on the late afternoon of the 20th. Rainfall from the 19th to 21st was around 1.00 inch with the exception for the eastern half of Mississippi where rainfall ranged from 1.00 to 3.00 inches.

High pressure built into the region from the 22nd to 31st. The 22nd and 23rd were rather dry. Typical summertime scattered showers and thunderstorms occurred from the 24th to 31st with rainfall amounts up to 1.50 inches.

River and Soil Conditions...

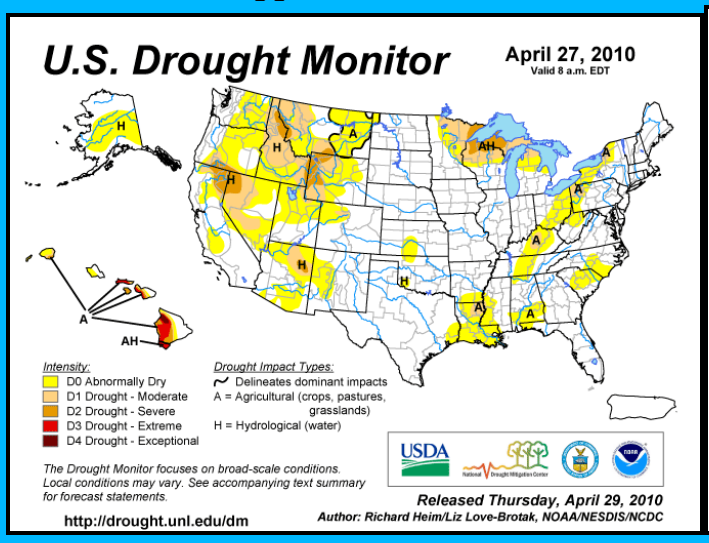
Below normal rainfall continued over the western two-thirds of the HSA. Rainfall ranged from 25 to 75 percent of normal across this area. The eastern one-third of Mississippi had rainfall from near normal and up to 200 percent of normal over Noxubee and eastern Kemper Counties.

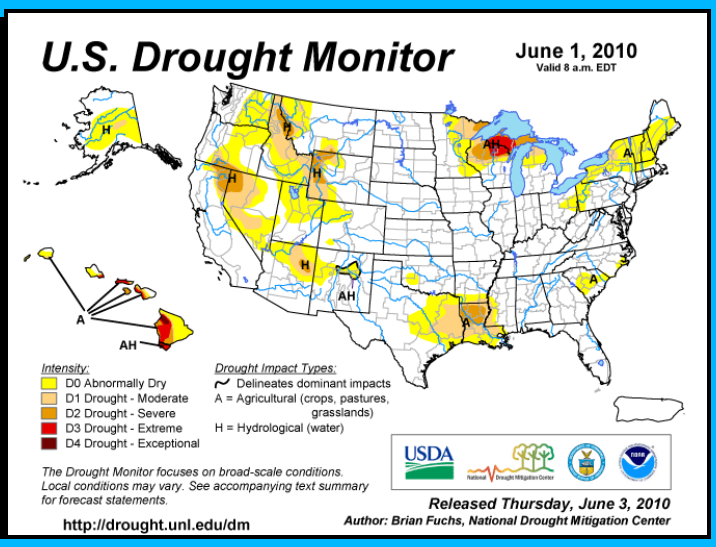
Soil moisture continued to plummet over the western two-thirds of the HSA. Soil moisture deficits from 1.00 to 3.00 inches prevailed across this area. Soil moisture in the eastern one-third of the HSA was near normal.



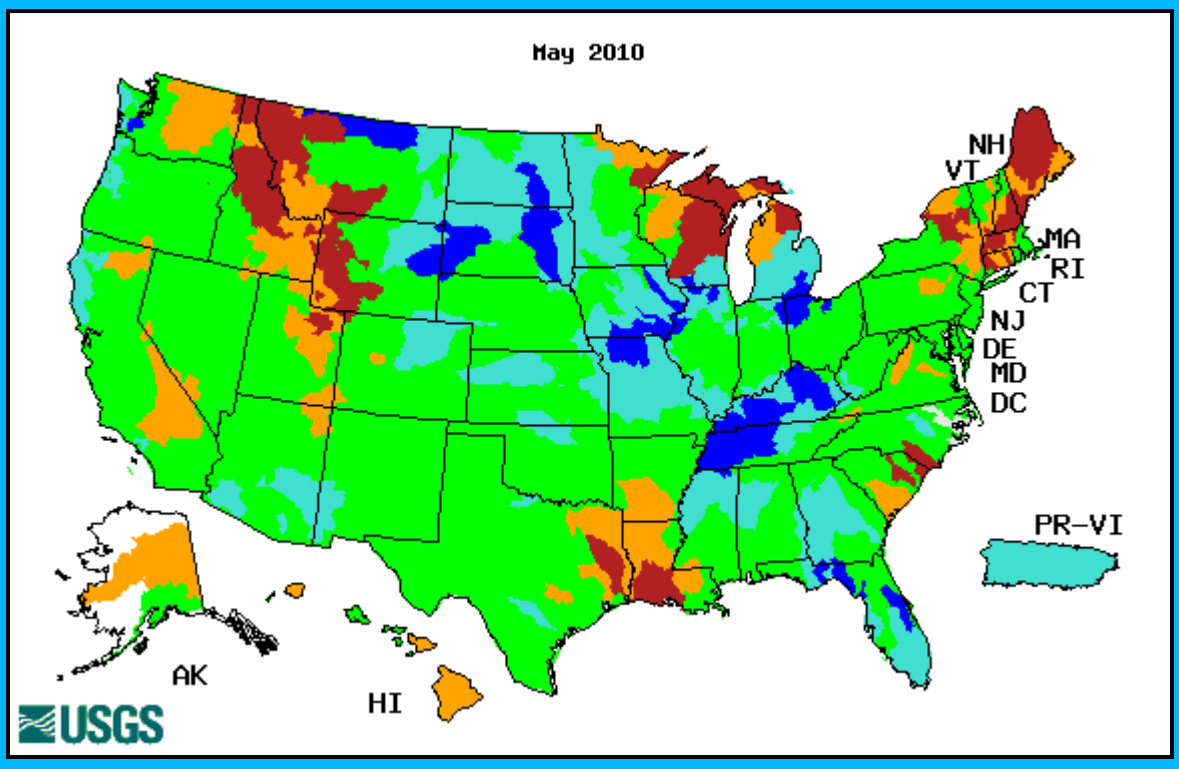
Soil Moisture anomaly (departure from normal): (25.4mm = 1 inch)

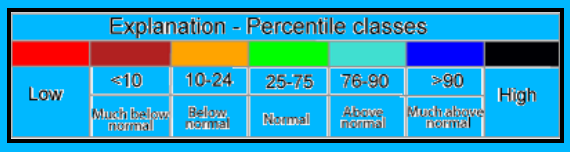
A comparison of the April 27th U.S. Drought Monitor to the June 1st U.S. Drought Monitor showed drought conditions increasing from moderate to severe in Northeast Louisiana while abnormally dry conditions remain over West Mississippi.





The United States Geological Survey's (USGS) May 2010 river streamflow records were compared with all historical May streamflow records. For the Pearl, Big Black, Homochitto, Pascagoula, and Tensas River Systems, streamflow was near normal. For the Tombigbee and Yazoo River System, stream flow was above normal. Streamflow was below normal over much of the remainder of Northeast Louisiana and portions of Southeast Arkansas.





Heavy rainfall late on the 30th of April produced flooding over the Upper Big Black River early in the month. Heavy rainfall on the 1st caused the Yalobusha to rise above flood stage. Minor to moderate rises occurred over the Upper Pearl and its tributaries during the first week of the month. Minor rises occurred along the Yazoo River. Little change to minor rises occurred on the remaining river systems in the HSA.

The Mississippi River rose above flood stage at Greenville and Vicksburg during the month. Arkansas City and Vicksburg rose to near flood stage but did not exceed it.

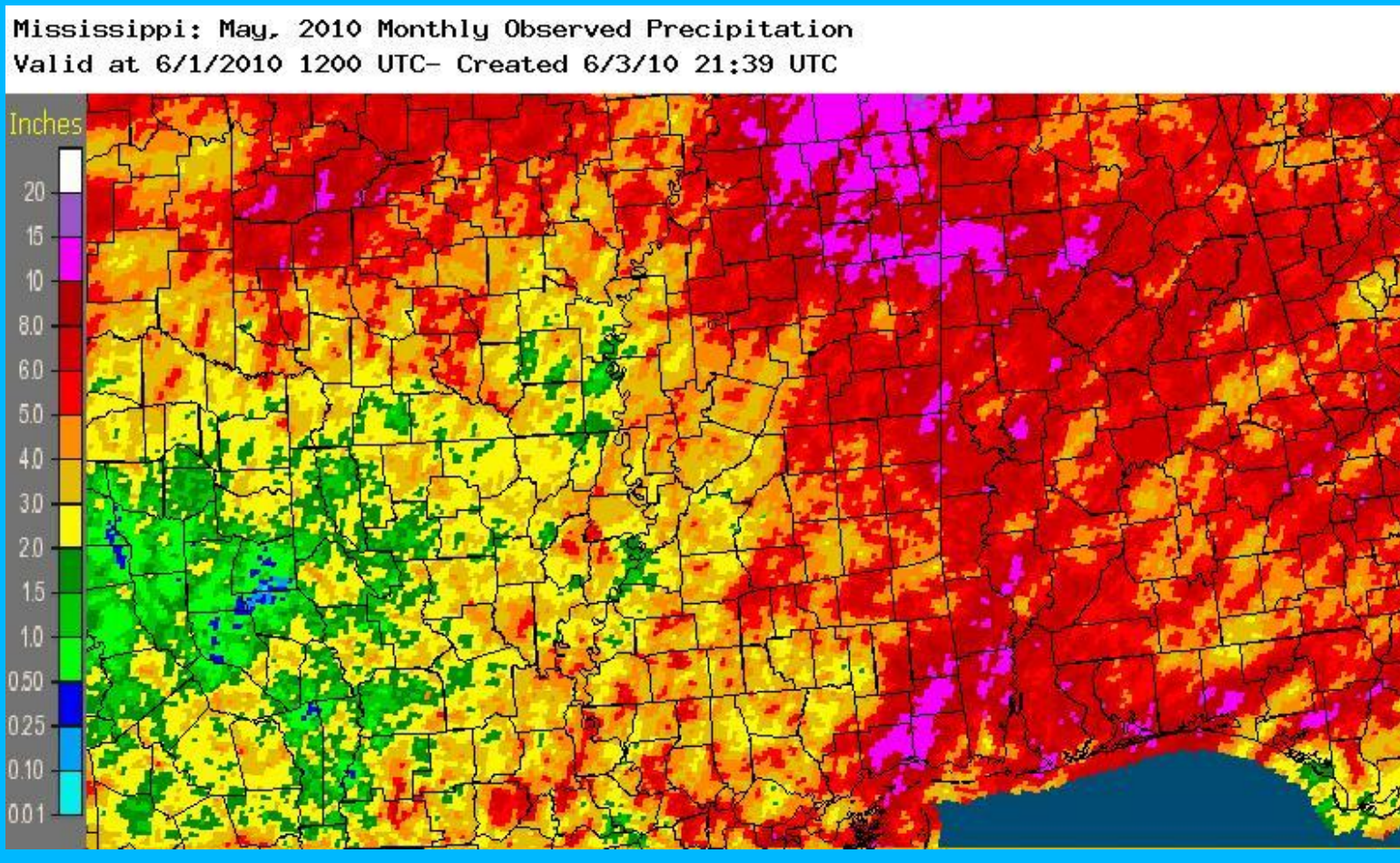
Based on current soil moisture conditions, current streamflow conditions, and an expected near normal rainfall over the HSA, the flood potential for next 60 to 90 days is expected to be:

***Pearl River System*:**	**Normal.**
***Yazoo River System*:**	**Normal.**
***Big Black River System*:**	**Normal.**
***Homochitto River System*:**	**Below Normal.**
***Pascagoula River System*:**	**Normal.**
***Northeast LA and Southeast AR*:**	**Below Normal.**
***Tombigbee River System*:**	**Normal.**
Mississippi River:	**Normal.**

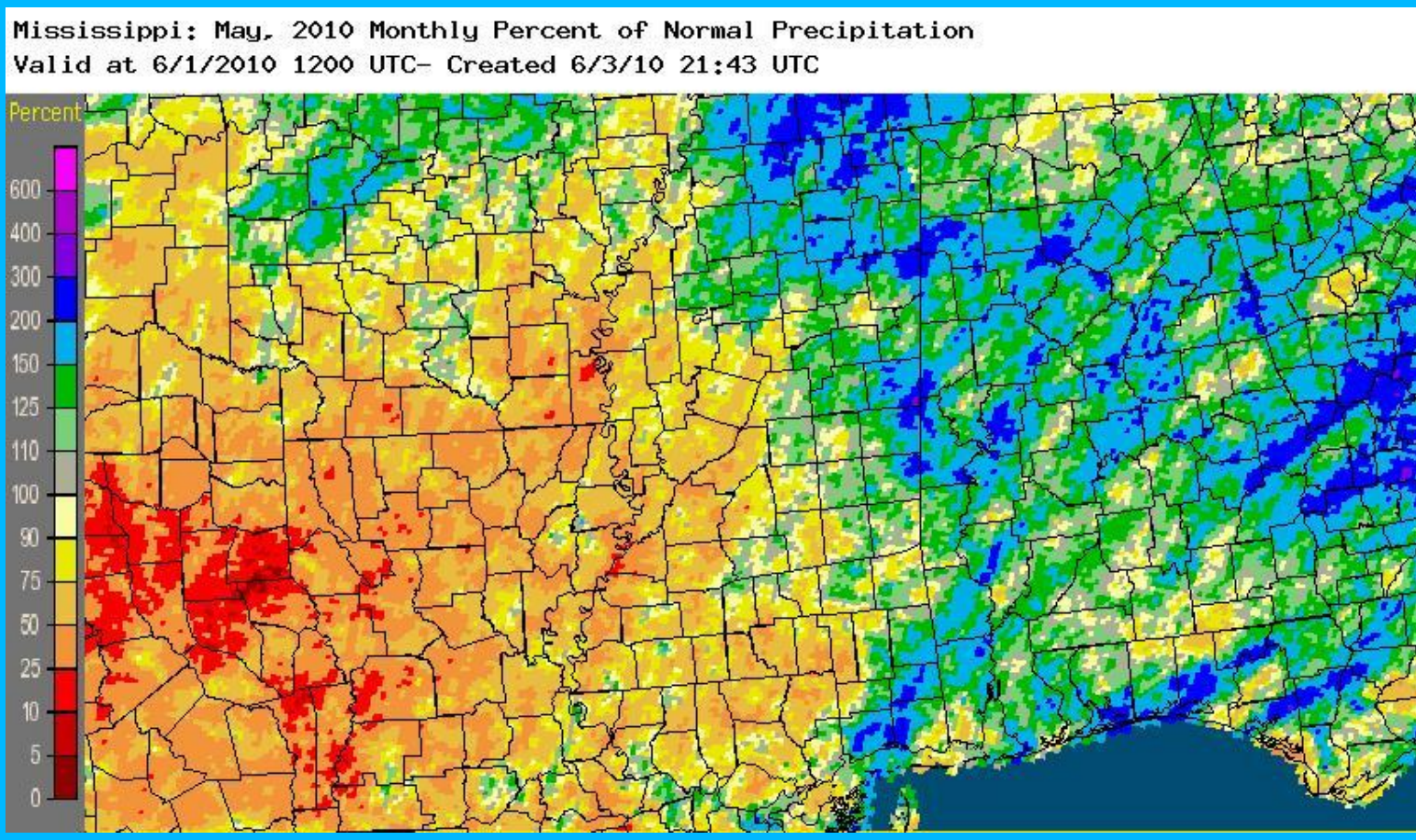
Rainfall for the month of May

The largest rainfall amounts in the HSA from NWS Cooperative Observer reports during the period from 7 am on April 30th until 7 am on May 31st were: 9.36 inches at Gholson, MS; 9.09 inches at Kosciusko, MS; 8.57 inches at Vaiden, MS; 8.60 inches at Carthage, MS; 8.50 inches at Macon, MS; 8.27 inches at Eupora, MS; 8.15 inches at Elliot, MS; and 7.94 inches at Grenada, MS.

The lowest rainfall totals in the HSA were 1.98 inches at Port Gibson, MS; 2.02 inches at Vidalia, LA; 2.12 inches at St. Joseph, LA; 2.53 inches at Dermott, AR; 2.54 inches at Eudora, AR; 2.70 inches at Crossett, AR and Red River Lock & Dam, LA; and 2.88 inches at Jonesville L&D, LA.



May 2010 Rainfall Estimates



May 2010 Percent of Normal Rainfall Estimates

Note: Observer rainfall and MPE may differ due to time differences.

May rainfall for Selected Cities...

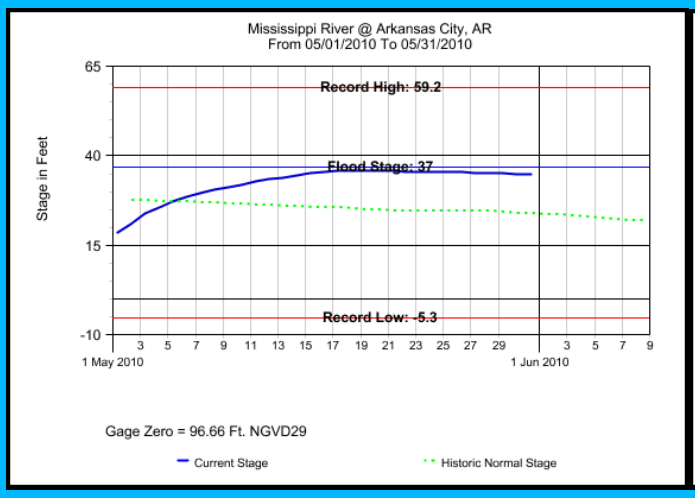
City (Airport)	May Rainfall	Departure from normal	2010 Rainfall	2010 Departure from Normal
Jackson, MS	3.52	-1.34	17.77	-8.98
Meridian, MS	4.37	-0.50	21.94	-3.15
Greenwood, MS	4.56	-0.79	21.32	-1.07
Greenville, MS	M	M	M	M
Hattiesburg, MS	3.77	-1.52	18.66	-5.94
Vicksburg, MS	M	M	M	M

*Note: last month 2010 total was wrong for Meridian…it should be 17.57

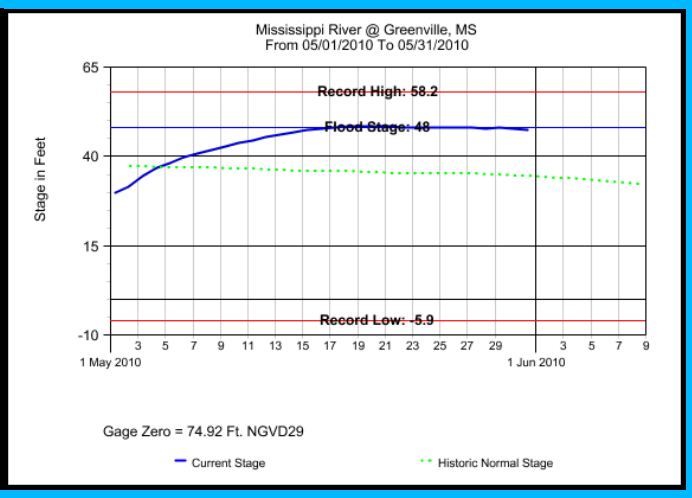
Mississippi River...

Mississippi River Plots for May, 2010

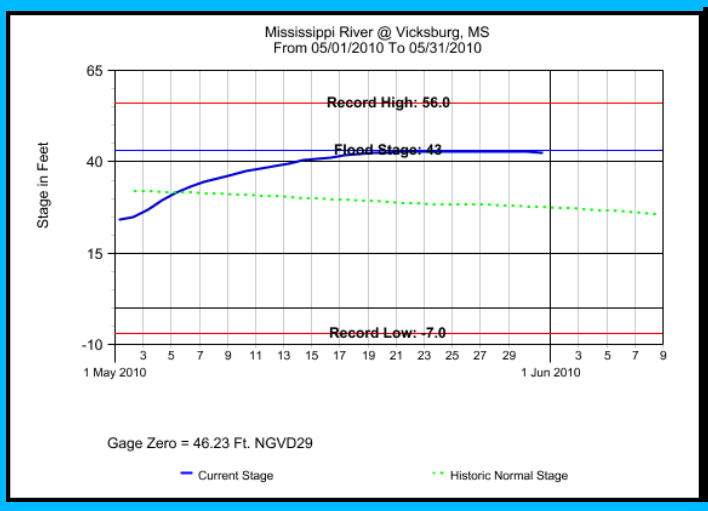
Plots Courtesy of the United States Army Corps of Engineers



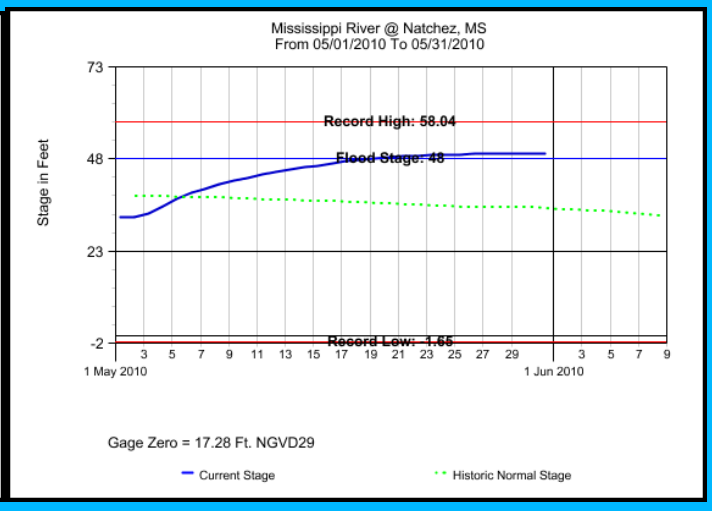
Arkansas City, AR



Greenville, MS



Vicksburg, MS



Natchez, MS

Preliminary high and low stages for the month:

Location	FS	High Stage(ft)	Date	Low Stage(ft)	Date
Arkansas City, AR	37	36.07	05/19/10	18.28	05/01/10
Greenville, MS	48	48.62	05/19/10	29.74	05/01/10
Vicksburg, MS	43	42.85	05/21/10	23.98	05/01/10
Natchez, MS	48	49.40	05/27/10	32.25	05/01/10

Total Flood Warning products issued: 09
Total Flood Statement products issued: 82
Total Flood Advisories MS River : 34
Daily Rainfall Products (RRA'S) issued: 31
Daily River Forecast Products (RVS'S) issued: 31
Daily River Stage products (RVA'S) issued: 31

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&

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Note: Provisional stage and precipitation data were furnished with the cooperation of the Mississippi, Louisiana, and Arkansas National Weather Service Cooperative Observer Programs, United States Geological Survey (USGS), United States Army Corps of Engineers (USACE), Pearl River Valley Water Supply District (PRVWSD), Pat Harrison Waterway District, Pearl River Basin Development District, and the Mississippi Department of Environmental Quality.

cc: USGS Little Rock District
USGS Ruston District
USACE Mobile District
USACE Vicksburg District
USACE Mississippi Valley Division
USGS Mississippi District
SRH Climate, Weather and Water Division
Lower Mississippi River Forecast Center
Pearl River Valley Water Supply District
Hydrologic Information Center
Southern Region Climate Center
Pat Harrison Waterway District
Pearl River Basin Development District